Installation Guide

Wyse® D Class, Wyse® X Class, and Wyse® Z Class Flash Upgrade Option Kit

Products: D90D7, D90DW, X90m7, X90mw, Z90D7, Z90S7, Z90DW, Z90SW

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WYSE

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For availability, pricing, and ordering information in the United States and Canada, call 1-800-GET-WYSE (1-800-438-9973) or visit us at **wyse.com**. In all other countries, contact your sales representative.

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1 Introduction

This guide provides step-by-step instructions to upgrade flash in the following products:

- **D Class:**
  - D90D7
  - D90DW
- **X Class:**
  - X90m7
  - X90mw
- **Z Class:**
  - Z90D7
  - Z90S7
  - Z90DW
  - Z90SW

Kit Contents

The kit includes a *Flash module*.

Kit Warranty

The warranty on this kit assumes the remaining months of warranty of the thin client in which it is installed, or for 90 days, whichever is greater. Installation of this kit will not void the factory warranty, however the user will be responsible for damage due to improper installation.

Overview

To upgrade flash:

1. Perform a hardware installation (install new flash) by completing one of the following (depending on your thin client class):
   - "Installing D Class Flash"
   - "Installing X Class Flash"
   - "Installing Z Class Flash"
2. Complete "Installing Firmware."

Wyse Technical Support

To access Wyse technical resources, visit http://www.wyse.com/support. If you still have questions, you can submit your questions using the Wyse Self-Service Center at http://support.wyse.com/selfservice.html or call Customer Support at 1-800-800-WYSE (toll free in U.S. and Canada). Hours of operation are from 6:00 A.M. to 5:00 P.M. Pacific Time, Monday through Friday.

To access international support, visit http://www.wyse.com/global.

Related Documentation and Services

Fact Sheets containing the features of hardware products are available on the Wyse Web site. Go to http://www.wyse.com/products and use the *Cloud clients* tab to locate and download the Fact Sheet for your hardware product.

Administrator and other documentation for your cloud client model are available at: http://www.wyse.com/manuals.

Wyse Online Community

Wyse maintains an online community where users of our products can seek and exchange information on user forums. Visit the Wyse Online Community forums at: http://community.wyse.com/forum.

2 Installing D Class Flash

This chapter contains information for users of Wyse D class thin clients who must install new flash.

Requirements

- Small Phillips screwdriver

WARNING: Flash modules may be susceptible to damage by Electro-Static Discharge (ESD). All industry-standard cautions should be followed to avoid ESD. Before you remove or install a module, touch any metal part of the chassis and keep that contact with the chassis during the installation process.

Procedures

CAUTION: Follow all precautions listed in the Quick-Start Guide that came with your thin client for disconnecting and reconnecting the thin client.

1. Perform a proper shutdown of the thin client by closing all files and ending your session, and then pressing the power button to turn off the thin client.
2. Unplug the power cord and power adapter, and remove any other cables from the thin client, and detach the vertical foot.
3. Position the thin client horizontally, where the Wyse logo-side with four flat screws is facing downward. Using the Phillips Screwdriver, remove the three screws from the cover along the back panel edge as shown in Figure 1.

Figure 1 Removing the cover screws

4. Place your thumbs on the top surface of the opposite end where the three screws were removed. With a continuous motion, push firmly downward and towards the back panel (pushing down unlatches the hooks under the cover). The cover will shift approximate 1/4 inch to hang over the back panel. **(a)** Grasp the overhanging cover edge and raise the edge about 1-1/2 inches, and then **(b)** pull the cover out towards the back panel at the same angle to free the opposite end of the cover from the remaining hooks, as shown in Figure 2.

Figure 2 Removing the cover

5. Remove the cover to expose the main-board shield.

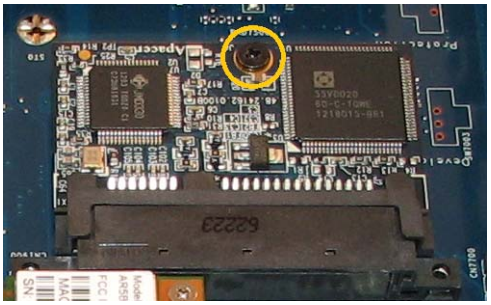
Figure 3 Main-board shield

6. Using the Phillips Screwdriver, remove the five screws from the main-board shield (four corner screws and one screw mid-way along the front edge). Remove the main-board shield and unplug the speaker wire (red wire) to expose the main board and Flash module as shown in Figure 4.

Figure 4 Main board and Flash module

7. Remove the existing flash module. Locate the flash module and use the Phillips Screwdriver to remove its retaining screw as shown in Figure 5. Lift the flash module out of the socket.

Figure 5 Removing the existing flash module



8. Install the new flash module in the reverse order of removing the original flash module. Carefully screw down its retaining screw until it is secure.
   WARNING: Flash modules may be susceptible to damage by Electro-Static Discharge (ESD). All industry-standard cautions should be followed to avoid ESD. Before you remove or install a module, touch any metal part of the chassis and keep that contact with the chassis during the installation process.
9. Replace the speaker wire (plug in red wire) and the main-board shield (five screws).
10. Replace the cover in the reverse order as described in step 4 (align the cover screw tabs with the screw holes and slide the cover toward the front of the thin client).
11. , Attach the cover screws in the reverse order as described in step 3.
12. Connect the power cord and power adapter, attach any other cables to the thin client, and then attach the vertical foot.
    CAUTION: Do not turn on the thin client. The thin client is ready to re-image, however the flash module does not contain an operating system. Turning on power to your thin client without firmware will display the error message “NO OPERATING SYSTEM FOUND.”

What’s Next

Continue with "Installing Firmware."

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3 Installing X Class Flash

This chapter contains information for users of Wyse X class mobile thin clients who must install new flash.

Requirements

- Small Phillips screwdriver

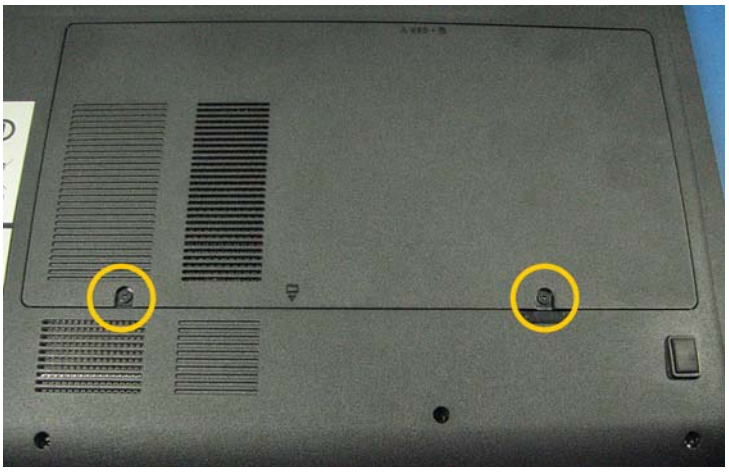
WARNING: Flash modules may be susceptible to damage by Electro-Static Discharge (ESD). All industry-standard cautions should be followed to avoid ESD. Before you remove or install a module, touch any metal part of the chassis and keep that contact with the chassis during the installation process.

Procedures

CAUTION: Follow all precautions listed in the Quick-Start Guide that came with your mobile thin client for disconnecting and reconnecting the mobile thin client.

1. Perform a proper shutdown of the mobile thin client by closing all files and ending your session, and then pressing the power button to turn off the mobile thin client.
2. Unplug the power cord and power adapter, and then remove any other cables from the mobile thin client.
3. Position the mobile thin client to access the bottom cover, and then remove the screws from the cover using a small Phillips screwdriver as shown in Figure 6.

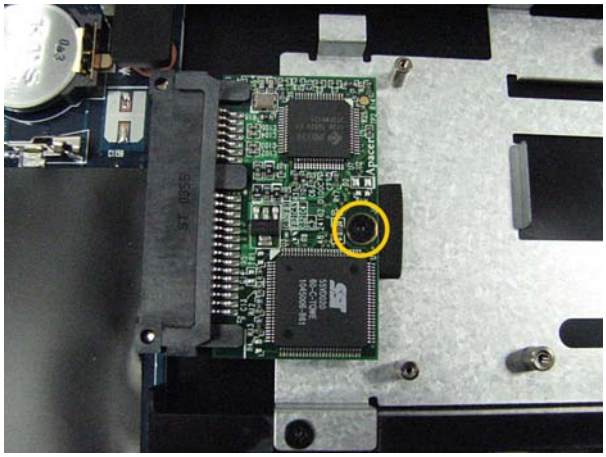
Figure 6 Removing the bottom cover screws



4. Lift the bottom cover to remove it and expose the flash module as shown in Figure 7.

5. Remove the existing flash module. Locate the flash module and use the Phillips Screwdriver to remove its retaining screw as shown in Figure 7. Lift the flash module out of the socket.

Figure 7 Removing the existing flash module



6. Install the new flash module in the reverse order of removing the original flash module. Carefully screw down its retaining screw until it is secure.
WARNING: Flash modules may be susceptible to damage by Electro-Static Discharge (ESD). All industry-standard cautions should be followed to avoid ESD. Before you remove or install a module, touch any metal part of the chassis and keep that contact with the chassis during the installation process.
7. Replace the flash cover in the reverse order as described in steps 4 and 3.
CAUTION: Do not turn on the mobile thin client. The mobile thin client is ready to re-image, however the flash module does not contain an operating system. Turning on power to your mobile thin client without firmware will display the error message “NO OPERATING SYSTEM FOUND.”

What’s Next

Continue with "Installing Firmware."

4 Installing Z Class Flash

This chapter contains information for users of Wyse Z class thin clients who must install new flash.

Requirements

- Small Phillips screwdriver

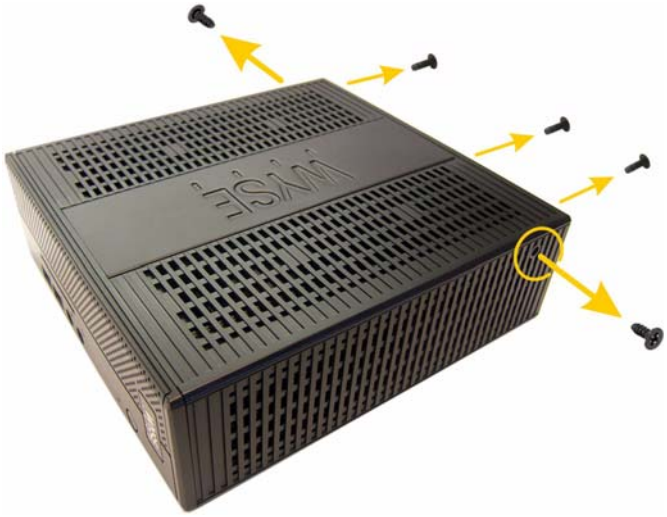
WARNING: Flash modules may be susceptible to damage by Electro-Static Discharge (ESD). All industry-standard cautions should be followed to avoid ESD. Before you remove or install a module, touch any metal part of the chassis and keep that contact with the chassis during the installation process.

Procedures

CAUTION: Follow all precautions listed in the Quick-Start Guide that came with your thin client for disconnecting and reconnecting the thin client.

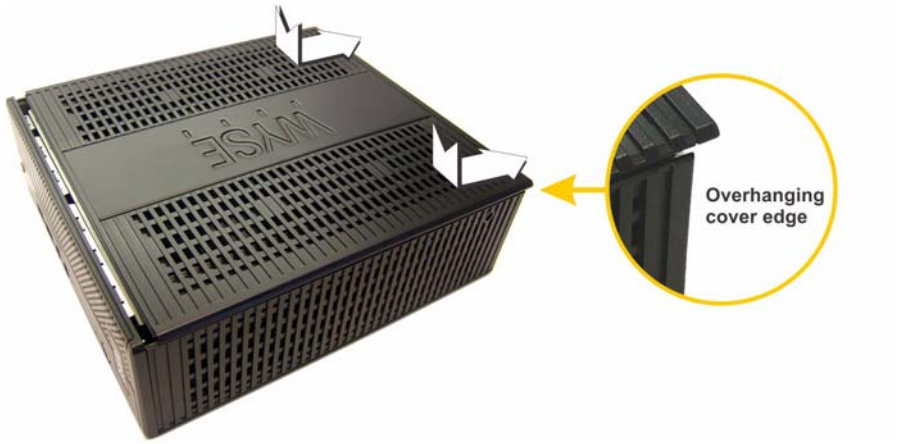
1. Perform a proper shutdown of the thin client by closing all files and ending your session, and then pressing the power button to turn off the thin client.
2. Unplug the power cord and power adapter, and remove any other cables from the thin client, and detach the vertical foot.
3. Position the thin client horizontally, where the Wyse logo-side with four flat screws is facing downward. Using the Phillips Screwdriver remove the two screws from either end near the back panel, and then remove the three screws from the cover along the back panel edge, as shown in Figure 8.

Figure 8 Removing the cover screws



4. Place your thumbs on the top surface above where the end screws were removed. With a continuous motion, push firmly downward and towards the back panel (pushing down unlatches the hooks under the cover). The cover will shift approximate 1/4 inch to hang over the back panel, as shown in Figure 9.

Figure 9 Unlatching the cover

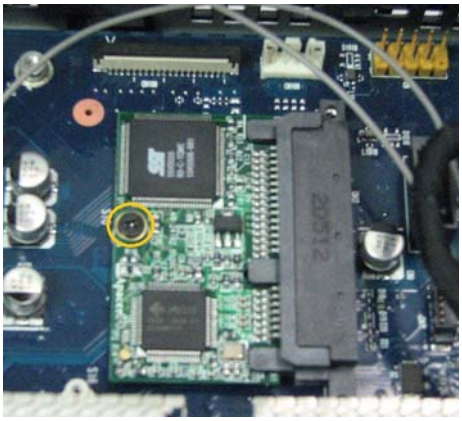


5. **(a)** Grasp the overhanging cover edge and raise the edge about 1-1/2 inches, and then **(b)** pull the cover out towards the back panel at the same angle to free the opposite end of the cover from the remaining hooks, as shown in Figure 10.

Figure 10 Removing the cover

6. Remove the cover to expose the flash module, as shown in Figure 11.
7. Remove the existing flash module. Locate the flash module and use the Phillips Screwdriver to remove its retaining screw as shown in Figure 11. Lift the flash module out of the socket.

Figure 11 Removing the existing flash module



8. Install the new flash module in the reverse order of removing the original flash module. Carefully screw down its retaining screw until it is secure.
   WARNING: Flash modules may be susceptible to damage by Electro-Static Discharge (ESD). All industry-standard cautions should be followed to avoid ESD. Before you remove or install a module, touch any metal part of the chassis and keep that contact with the chassis during the installation process.
9. **(a)** Align the cover screw tabs with screw holes and press downward; **(b)** slide cover toward the front of the thin client, as shown in Figure 12.

Figure 12 Reattaching the cover

10. , Attach the screws in the reverse order as described in step 3.
11. Connect the power cord and power adapter, attach any other cables to the thin client, and then attach the vertical foot.
    CAUTION: Do not turn on the thin client. The thin client is ready to re-image, however the flash module does not contain an operating system. Turning on power to your thin client without firmware will display the error message “NO OPERATING SYSTEM FOUND.”

What’s Next

Continue with "Installing Firmware."

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5 Installing Firmware

This chapter includes the requirements and procedures you need to install and use Wyse® USB Firmware Tool™ to update your thin client to the firmware you need.

TIP: The purpose of the Wyse USB Firmware Tool is to configure a bootable USB key for device firmware. In the following procedures, you will create a configured USB key containing the firmware contents that you need, and then boot from this configured USB key on appropriate product and flash size devices to push the contents of the USB key onto these *target* devices (containing your upgraded flash).

Requirements

- Machine with a ***minimum of 16GB of free space*** running either of the following:
- Windows 2003 Server
- Windows Server 2008
- Windows Server 2008 R2
- Windows 7 Enterprise (32-bit and 64-bit)
- Windows 7 Ultimate (32-bit and 64-bit)
- USB Key:
  - USB 2.0 only
  - USB key size should be 16 GB (see also "USB Keys - Troubleshooting Boot Issues")

CAUTION: During the USB key configuration process the USB key will be reformatted.

Procedures

IMPORTANT: Complete the following procedures as an administrator (administrator privileges are required).

Step 1: Download and Ready the Firmware You Require

You must download and ready (extract) the firmware you want to use for updating your devices *before* you start the *Wyse USB Firmware Tool* wizard. Firmware files are normally made available in .exe or .zip format and must be *downloaded* and then *extracted* to a local hard drive folder that is available to the *Wyse USB Firmware Tool* wizard.

Wyse provides firmware for supported devices from its *Software Downloads* Web site at: http://www.wyse.com/serviceandsupport/support/downloads.asp. Simply select the firmware you need in the *Product Downloads Active* box, click **Search**, and use the *Active Firmware* link you need.

CAUTION: For the Windows 7 operating systems, be sure to right-click on the .exe file you downloaded (for example, the *BDB0_0846_4096.exe* file for the D90D7 OS image) and select the **Run as administrator** option to extract the files.

The following are examples of the *Active Firmware* links that you must use (names to click) to download and extract the firmware to the local hard drive folder you want:

- **D90D7 Only** - *BDB0_0846_4096.exe*
- **D90DW Only** - *ADA0_S727_2048.exe*
- **X90m7 Only** - *BXB8_0833_4096.exe*
- **X90mw Only** - *AXA8_S716_2048.exe*
- **Z90D7 and Z90S7 Only** - *BZB0_0830_4096.exe*
- **Z90DW and Z90SW Only** - *AZA0_S723_2048.exe*

Step 2: Install Wyse USB Firmware Tool v1.18

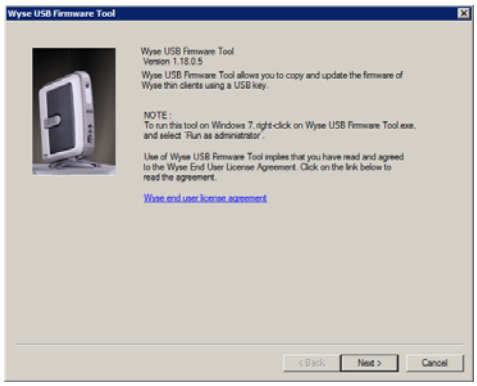
1. Download the *Wyse USB Firmware Tool v1.18_GA.exe* to a folder on your machine (go to http://www.wyse.com/serviceandsupport/support/downloads.asp, in the *Product Downloads Active* list, select **USB Firmware Tool** under *Wyse Imaging Tools*, click **Search**, and then download the *Wyse USB Firmware Tool* software).
2. Double-click the *Wyse USB Firmware Tool v1.18_GA.exe* to execute the file and open the *WinZip Self-Extractor* dialog box.
3. Enter the destination folder you want (for example, **C:\USBFT**) in the **Unzip to folder** box, and then click **Unzip** to extract all files from the *Wyse USB Firmware Tool v1.18_GA.exe* file into the folder. The default directory for the extracted files is **Wyse USB Firmware Tool**.
   CAUTION: It is not recommended to use your desktop for the destination folder as there are several files that will be extracted from the .exe file.
4. After installation, create a shortcut on the desktop for the *Wyse USB Firmware Tool.exe* file (see your operating system documentation).

Step 3: Use Wyse USB Firmware Tool to Configure a Single USB Key to Install Firmware

CAUTION: For Windows 7 operating systems, be sure to right-click on **Wyse USB Firmware Tool.exe** and select the *Run as administrator* option.

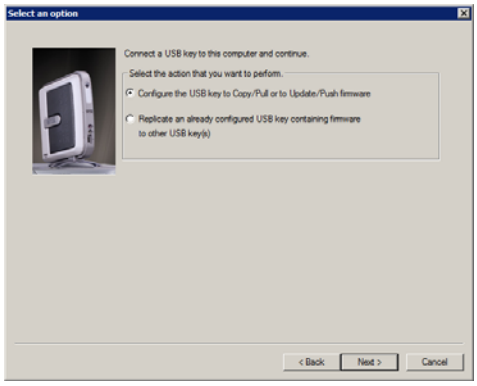
1. Double-click the shortcut on the desktop for the *Wyse USB Firmware Tool.exe* file to run the tool and open the *Wyse USB Firmware Tool* wizard (the welcome page provides the product version and description, and a link to view the Wyse end user license agreement).

Figure 13 Wyse USB Firmware Tool wizard


Wyse USB Firmware Tool
Wyse USB Firmware Tool
Version 1.18.0.5
Wyse USB Firmware Tool allows you to copy and update the firmware of Wyse thin clients using a USB key.
NOTE :
To run this tool on Windows 7, right-click on Wyse USB Firmware Tool.exe, and select 'Run as administrator'.
Use of Wyse USB Firmware Tool implies that you have read and agreed to the Wyse End User License Agreement. Click on the link below to read the agreement.
Wyse end user license agreement
< Back
Next >
Cancel

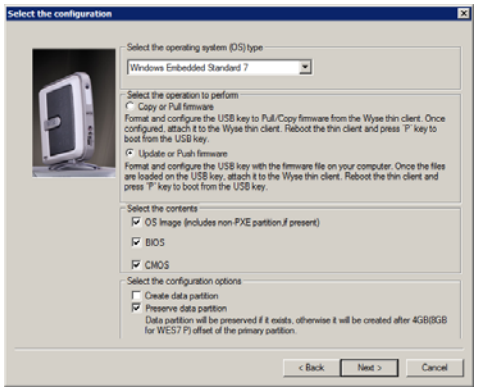
2. Click **Next** to open the **Select an Option** dialog box.

Figure 14 Configuration options


Select an option
Connect a USB key to this computer and continue.
Select the action that you want to perform.
Configure the USB key to Copy/Pull or to Update/Push firmware
Replicate an already configured USB key containing firmware to other USB key(s)
< Back
Next >
Cancel

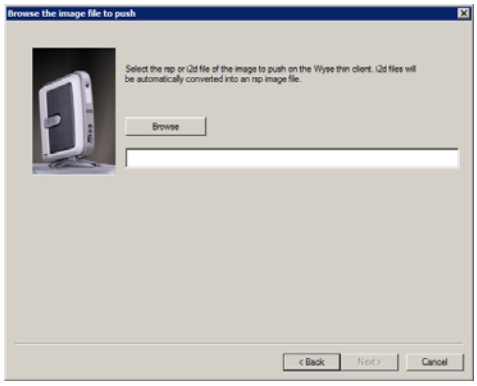
3. Select the **Configure the USB key to Copy/Pull or to Update/Push firmware** option, and then click **Next** to open the **Select the Configuration** dialog box.

Figure 15 Update firmware options - Windows Embedded Standard 7 example


Select the configuration
Select the operating system (OS) type
Windows Embedded Standard 7
Select the operation to perform
Copy or Pull firmware
Format and configure the USB key to Pull/Copy firmware from the Wyse thin client. Once configured, attach it to the Wyse thin client. Reboot the thin client and press 'F' key to boot from the USB key.
Update or Push firmware
Format and configure the USB key with the firmware file on your computer. Once the files are loaded on the USB key, attach it to the Wyse thin client. Reboot the thin client and press 'F' key to boot from the USB key.
Select the contents
OS Image (includes non-PXE partition,if present)
BIOS
CMOS
Select the configuration options
Create data partition
Preserve data partition
Data partition will be preserved if it exists, otherwise it will be created after 4GB(8GB for WES7 P) offset of the primary partition.
< Back
Next >
Cancel

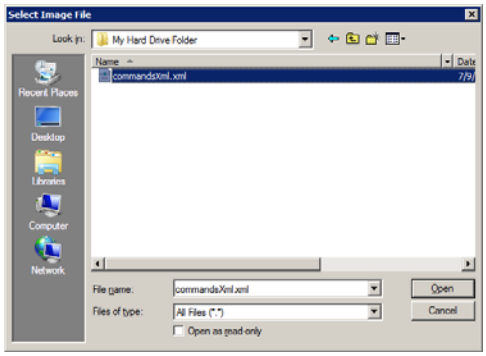
4. Depending on the operating system of the firmware (from "Step 1: Download and Ready the Firmware You Require") that you will be pushing onto the *target* devices (containing your upgraded flash), select one of the following *OS type* options:
   - **D90DW, X90mw, Z90DW, and Z90SW Only** - *Windows Embedded Standard*
   - **D90D7, X90m7, Z90D7, and Z90S7 Only** - *Windows Embedded Standard 7*
5. Select the **Update or Push Firmware** operation to perform option. Be sure that all three contents options are selected (**OS Image**, **BIOS**, and **CMOS**). Leave the default-unselected **Create data partition** check box. Leave the default-selected **Preserve data partition** check box.
6. Click **Next** to open the browse dialog box.

Figure 16 Browse for image file


Browse the image file to push
Select the rsp or i2d file of the image to push on the Wyse thin client. i2d files will be automatically converted into an rsp image file.
Browse
< Back
Next >
Cancel

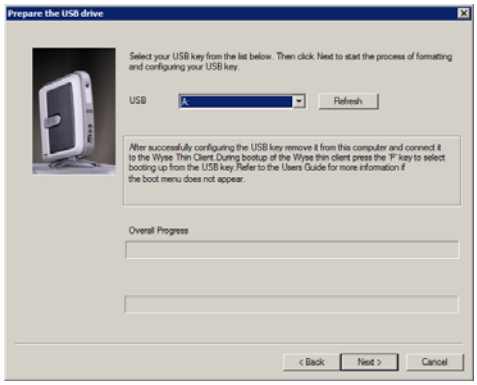
7. Click **Browse**.

Figure 17 Browse to select commandsXml.xml example



8. Navigate to the image folder (*on your hard drive*) that contains the firmware image you extracted (this is the location you selected in "Step 1: Download and Ready the Firmware You Require"), click on the **commandsXml.xml** file to select it (you may need to select the *All Files* option from the *Files of Type* box to display the **commandsXml.xml** file for selection), and then click **Open**.
   CAUTION: Be sure to use the **commandsXml.xml** file you extracted in "Step 1: Download and Ready the Firmware You Require"; do not use the **commandsXml.xml** file directly from an .exe or .zip download.
9. In the browse dialog box, click **Next** to open the **Prepare the USB Drive** dialog box.

Figure 18 Prepare USB key for configuration


Prepare the USB drive
Select your USB key from the list below. Then click Next to start the process of formatting and configuring your USB key.
USB
A:
Refresh
After successfully configuring the USB key remove it from this computer and connect it to the Wyse Thin Client. During bootup of the Wyse thin client press the 'F' key to select booting up from the USB key. Refer to the Users Guide for more information if the boot menu does not appear.
Overall Progress
< Back
Next >
Cancel

10. Select the USB key onto which you want the configurations (you can use **Refresh** as needed to recognize an inserted USB key), and then click **Next**. The progress bars show the overall (formatting and configuration) progress and task progress.
    CAUTION: DO NOT interrupt the formatting and configuration process. All process requirements are done automatically. The progress screen may display for several seconds or longer. You can safely ignore any error message.
11. After configuration, click **Finish** to close the wizard and then remove the configured USB key for use (you will use the configured USB key on your *target* devices).

TIP: At this time you can also *replicate/duplicate* the configured USB key (containing the firmware you want to push) for simultaneous usage on target devices (by users in several locations at the same time). For full Wyse USB Firmware Tool details, see *Users Guide: Wyse® USB Firmware Tool 1.18*.

Step 4: Use the Configured USB Key to Install Firmware on Each Thin Client

On each thin client you want to convert, you must configure it to boot from the configured USB key.

Depending on your device, use the following guidelines:

- **For D90D7 and D90DW thin clients**:
  - You must change the BIOS Setup Utility (you do not need to restore your settings later, as the new firmware will restore default settings automatically after you start your thin client): Be sure the client is shut down and disconnected from any network. Attach the configured USB key to the thin client. During boot, press and hold the **Delete** key. Enter the password **Fireport** (this is case sensitive) and press **Enter**. Select the **Advanced** tab. Using the down arrow key, select the **Boot from USB** option and press **Enter**. Select the **Enabled** option and press **Enter**. Press the **F10** key, and then press **y** to save the BIOS settings and reboot. Follow the process prompts.
- **For X90m7 and X90mw mobile thin clients**:
  - You must change the BIOS Setup Utility (you can restore your settings later in "Step 5: Verifying Thin Client Operation"): Be sure the client is shut down and disconnected from any network. Attach the configured USB key to the mobile client. During boot, press and hold the **F2** key. Enter the password **Fireport** (this is case sensitive) and press **Enter**. Select the **Boot** option and press **Enter**. Select the **Legacy** option and press **Enter**. Select the **Normal Boot Menu** option and press **Enter**. Select the option displaying your USB key vendor name and move it to the 1 position by using the + key. Save the BIOS settings and reboot. Follow the process prompts.
- **For Z90D7, Z90S7 Z90DW, and Z90SW thin clients**:
  - You must use the one-time boot menu (the one-time boot menu will *not* modify your default BIOS configurations): Be sure the client is shut down and disconnected from any network. Attach the configured USB key to the thin client. During boot, press and hold the **P** key. Select the **USB HDD** option (displaying your USB key vendor name) and press **Enter**. Follow the process prompts.

TIP: When booting a *target* device from the configured USB key (*containing the contents to be pushed to a target device*), you will be prompted to continue with the *push* process (to continue, type **y** and press **Enter**). Once the *push* process is complete, you will be prompted to reboot (to reboot, press **Enter** and remove the USB key).

CAUTION: During the *Critical Operation in Progress* message, do not interrupt the process.

TIP: You can use the configured USB key to push the firmware onto as many target devices as you want (repeat "Step 4: Use the Configured USB Key to Install Firmware on Each Thin Client").

Step 5: Verifying Thin Client Operation

After the thin client reboots, you can verify your general client information. For example, the *Client Information* dialog box (D class), or the *System Information* dialog box (X class and Z class) information is correct (that the new Flash is correctly recognized by the system). After verification, the thin client is ready for operation and setup by an administrator.

TIP: Administrator and other documentation for your thin client model are available at: http://www.wyse.com/manuals.

CAUTION: For X90m7 and X90mw mobile thin clients, you can change the BIOS Setup Utility back to its original state.

Troubleshooting

This section contains general troubleshooting information.

USB Keys - Troubleshooting Boot Issues

Due to different manufacturing processes on USB keys (and the variety of them), not all brands have been tested with the Wyse USB Firmware Tool. If you experience problems booting from a configured USB key, it is recommended that you try a different brand of USB key.

SanDisk Cruiser Flash Drives - Troubleshooting Partition Issues

Problem: How can I properly use a SanDisk Cruiser flash drive to image supported devices using the Wyse USB Firmware Tool? (KB17735)

Solution: SanDisk flash drives come with support for U3 (for details on U3, see http://www.u3.com). When you initially use these drives, you are prompted to select the use for the drive: *Apps and Storage* or only *Storage*. If you select the *Apps and Storage* option, the drive will create two partitions, one of which is identified as a CD and is a read only partition. This partition sometimes prevents the Wyse USB Firmware Tool to properly prepare the USB key for imaging a device. To resolve this problem you can do one of the following:

- Go to http://www.sandisk.com, search in the SanDisk Knowledge Base for document **2550**, and then follow the instructions in the documentation.
- Go to http://www.sandisk.com/DriverDownload/driverList.asp, select **USB Flash Drives** from the *Select Product Type* list, click **Find Driver**, select **U3 LaunchPad Remover**, click **Continue**, and then download and use the *U3 Launchpad Remover* according to the instructions.

Installation Guide

Wyse® D Class, Wyse® X Class, and Wyse® Z Class Flash Upgrade Option Kit
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